

Commercial Building Inspection

Top 10's



Breakdown by Category

- **Submittal/Administrative**
- **Accessibility**
- **Egress and Railings**
- **Fire Protection**
Construction/Sprinkler/Alarm
- **Structural**
- **HVAC &Energy**

Submittal/ Administrative

- 1) No State approved stamped plans on site.

CONSTRUCTION DOCUMENTS
March 1

DRAWING INDEX

Notes and Details

Conditionally
APPROVED
DEPT. OF SAFETY AND PROFESSIONAL
SERVICES
DIVISION OF INDUSTRY SERVICES

Jack A. Miller

SEE CORRESPONDENCE

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o=DEPT. OF SAFETY &
PROFESSIONAL SERVICES,
ou=DIVISION OF INDUSTRY
SERVICES,
email=jack.miller@wisconsin.
gov, c=US
Date: 2017.04.19 17:59:22
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Submittal/Administrative

State Approved Plans includes:

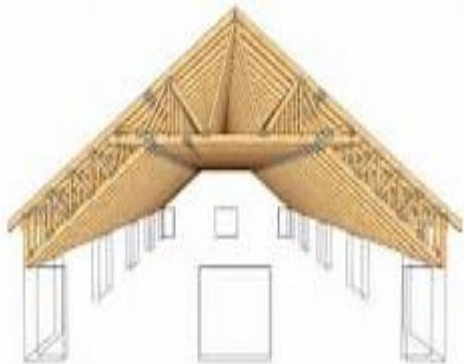
- **All sheets.**
- **Correct size plans.**
- **Correct version of plans.**
- **With conditional approval letter attached.**
- **Includes electronic submitted plans.**

Plan Review Letter

- A **full size copy** of the approved **plans, specifications and this letter** shall be on-site during construction and open to inspection by authorized representatives of the Department, which may include local inspectors. If plan index sheets were submitted in lieu of additional full plan sets, a copy of this approval letter and index sheet shall be attached to plans that correspond with the copy on file with the Department. If these plans were **submitted in an electronic form, the designer is responsible to download, print, and bind the full size set of plans along with our approval letter.** A department electronic stamp and signature shall be on the plans which are used at the job site for construction.

Submittal/ Administrative

2) **Component installation started prior to approval.** Fire alarm plans, fire suppression. Metal building plans, truss plans, precast, elevator.



Submittal / Administrative

3) Plans not submitted at all prior to the start of new buildings, additions, alterations or change of use.



Submittal / Administrative

- **Confusion.**

- **Who is AHJ?**

DSPS unless delegated to the municipality. If delegated, the municipality should be able to show delegation correspondence or on DSPS website

- **When Do I need to submit plans?**

Table 361.30-1

Buildings Exempt from Plan Review

Building Type or Occupancy	Building Description
Assembly Group A-2, A-3 Business Group B Factory Group F Mercantile Group M Storage Group S Utility and Miscellaneous Group U	Containing less than 25,000 cubic feet in volume

- **When do I need a Supervising Professional?**

When volume of the completed building will be over 50,000 Cubic Feet

Submittal/ Administrative

4) Supervising professionals not knowing where there project is located.

- **Is the project in the town, village or city of
????**

Submittal / Administrative

5) Supervising professionals submitting Compliance Statements prior to project completion.



Submittal / Administrative

- **Don't submit compliance statements until:**
- **Project is finished.**
- **All component submittals in.**
- **All cited code violations corrected.**

Submittal / Administrative

6) Supervising professionals withdrawing from the project in the middle of the project.

Submittal / Administrative

- **Communication:**
- **Supervising professionals, contractors, owners, inspectors all on the same page. Call, e-mail, text.**
- **Everyone wants a successful project.**



Accessibility

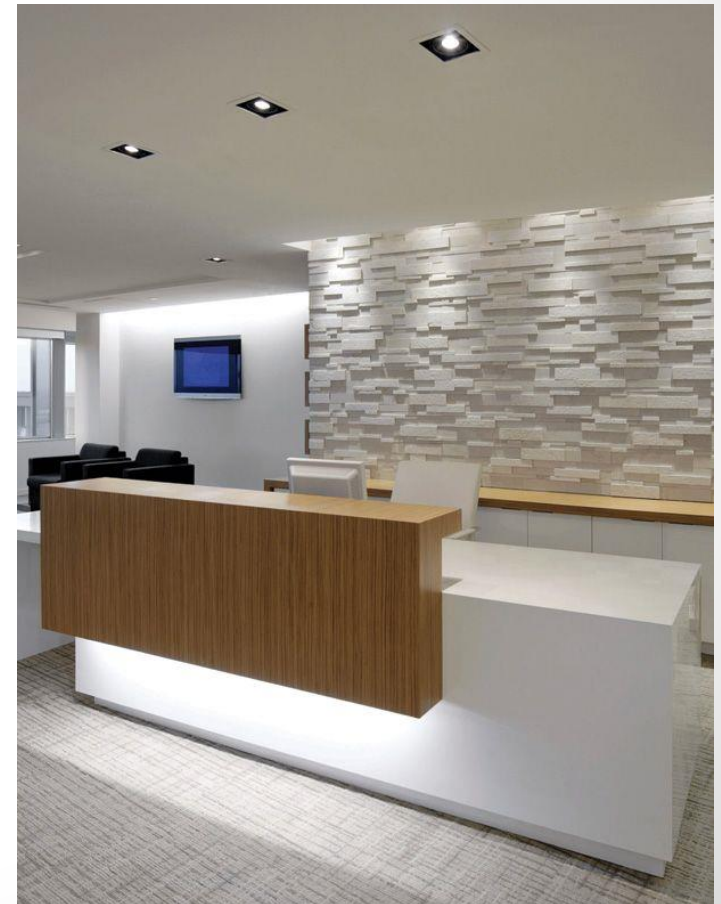
Accessibility

1) Flush valve wrong side of water closet



Accessibility

2) Accessible counter height wrong for service counter



Accessibility

3) Accessible break room sink wrong height



Accessibility

4) Type A unit (clear space required around fixtures, removable cabinets under sink and work space)



Accessibility

5) Handicap signs not mounted to the building or post. Just painting the handicap symbol on the pavement and not mounting a sign. ICC ANSI A 117.1 Chapter 5

- Signage is not required when the total number of parking spaces provided is 4 or less SPS 362.1110



Accessibility

6) Door hardware (knob handles installed instead of lever) ICC/ANSI A117.1-2009 404.2.6 (2015)



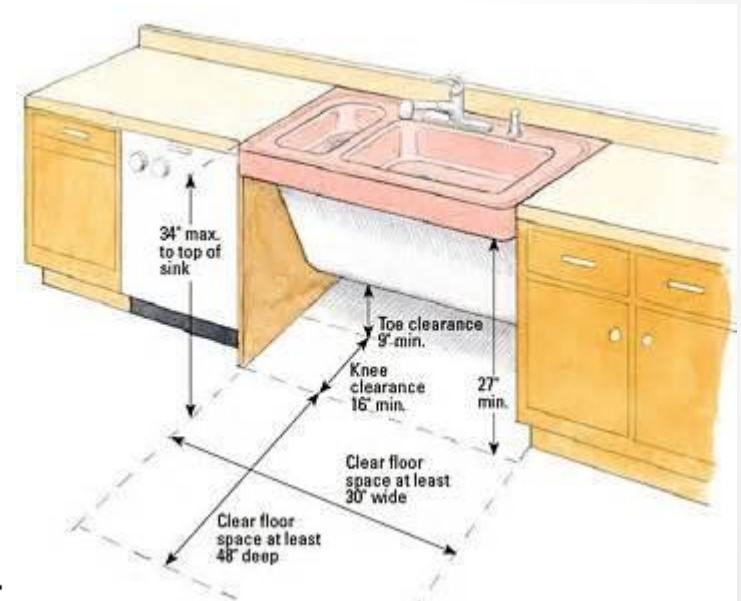
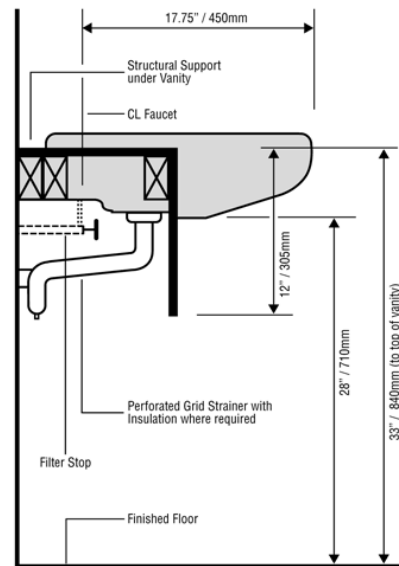
Accessibility

7) Door maneuvering clearance



Accessibility

8) Trap wrap or offset trap not provided on accessible sinks



Accessibility

9) No vertical grab bar installed in ADA toilet stall.

- Note that IEBC 605 may make this issue retroactive if there are actions occurring within the building involving alterations or additions.



Accessibility

10) Accessible route exterior of the building



Accessibility

11) Curb at roll-in shower



Accessibility

12) Control mounting

height



Accessibility

- **13) Toe guard on ramp railing not provided.
(When ramp has a rise of less than 30")**

Egress and Railings

Egress and Railings

1) Handrail both sides of stairs or ramps



Egress and Railings

2) Emergency lighting plans (insufficient lighting)



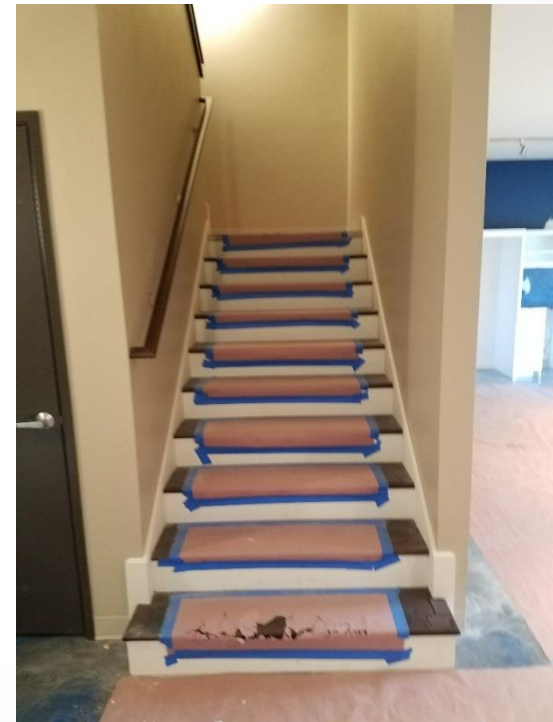
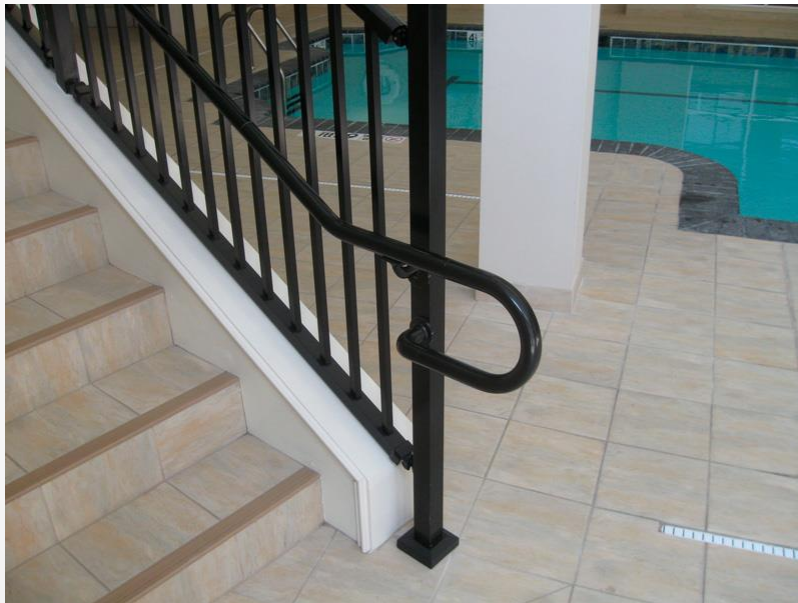
Egress and Railings

3) Exit signs missing/lacking, or inappropriately placed.

- **Many local Fire Dept's see that there are more than 1 door, thus require exit signs when code requires exit signs ONLY when there are 2 or more doors REQUIRED for the space. The excess doors are many times "convenience doors" and not "required doors".**

Egress and Railings

4) Handrails on stairways not terminating 12" past top and bottom step as well as the handrail should return to a wall, guard or walking surface. IBC 1012



Egress and Railings

5) Incorrect Stair Riser and Tread





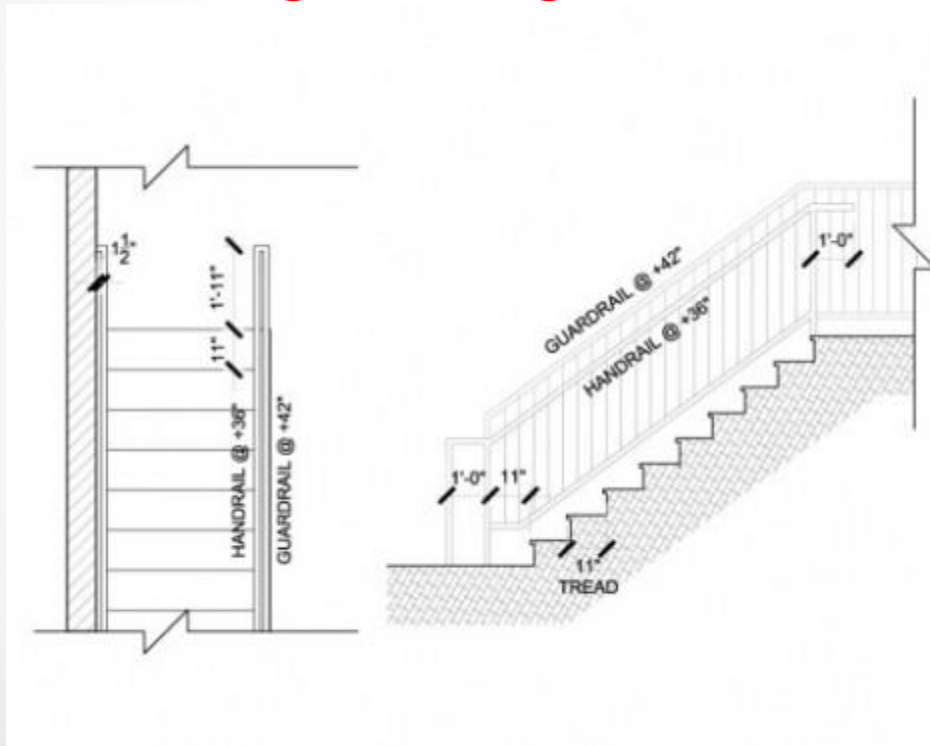
Egress and Railings

6) Unequal stair treads and risers.



Egress and Railings

7) Handrail used as a guardrail rather than providing both guard and handrails.



Egress and Railings

8) Thumb knobs on storefront exit doors



Egress and Railings

9) Backup battery dead in emergency egress lighting.



These five-year old manufacturer original batteries show just how badly deformed a dead UPS battery can become. As the UPS tries continuously to charge its failing batteries, the overcharging creates hydrogen gas and swells the battery. Not only do such batteries render the UPS electrically inoperative but they can damage the battery compartment and become jammed inside the UPS. Lex Tec recommends running a UPS battery self test regularly.

Egress and Railings

10) Two way communication at elevators

- IBC 1007.8 requires such installation immaterial if the building is sprinklered or not... the need for installation is not like that associated with an area of refuge.



Fire Protection Construction/Sprinkler/Alarm

Fire Protection

Construction/Sprinkler/Alarm

1) Sprinkler head obstructions



Fire Protection

Construction/Sprinkler/Alarm

2) Continuous separation behind bathtubs on party walls, such as apartment buildings. Many have been stopping the gypsum board at the tub instead of keeping it continuous behind the tub. IBC Chapter 7

Fire Protection Construction/Sprinkler/Alarm

3) Sprinkler heads not being installed on decks in dwelling units.

SPS 362.0903(9) Balconies – Sprinkler protection complying with NFPA13 shall be provided for exterior balconies, decks, and ground-floor patios of dwelling units where the building is of Type V construction,, provided there is a roof or deck above.

Fire Protection Construction/Sprinkler/Alarm



Fire Suppression FAQ

3. QUESTION: SPS 362.0903 (9) Balconies

What suppression system type(s) is this section applicable to, what part of NFPA 13 should be adhered to, and what constitutes a roof or deck above?

This Wisconsin Amendment is only applicable to 13R systems that are installed in 4-story or less residential buildings of Type V construction. The design provisions such as the spacing, density, area, system type, etc. from NFPA 13 shall be adhered to. The intent of this section was not to adopt NFPA 13 Section 8.15.7 for when to apply sprinkler protection under exterior roofs or canopies.

Fire Protection

Construction/Sprinkler/Alarm

4) Rated construction not extending through soffit areas.





Fire Protection

Construction/Sprinkler/Alarm

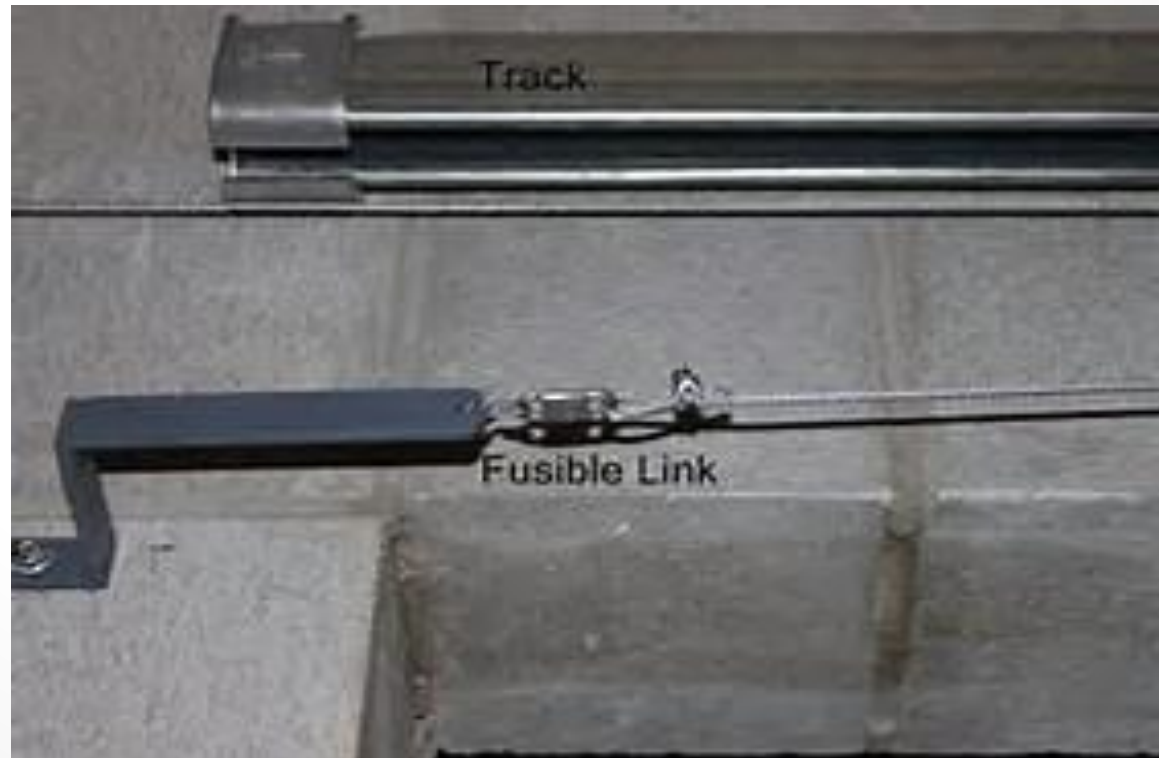
5) Fire Caulk being used that doesn't meet the UL or ASTM standards as required in IBC 713.



Fire Protection

Construction/Sprinkler/Alarm

6) Roll-up fire doors that don't have smoke actuation installed on them in accordance with NFPA 72.



Fire Protection

Construction/Sprinkler/Alarm

7) Firestopping systems, penetrations and wall to ceiling joint system not done correctly.

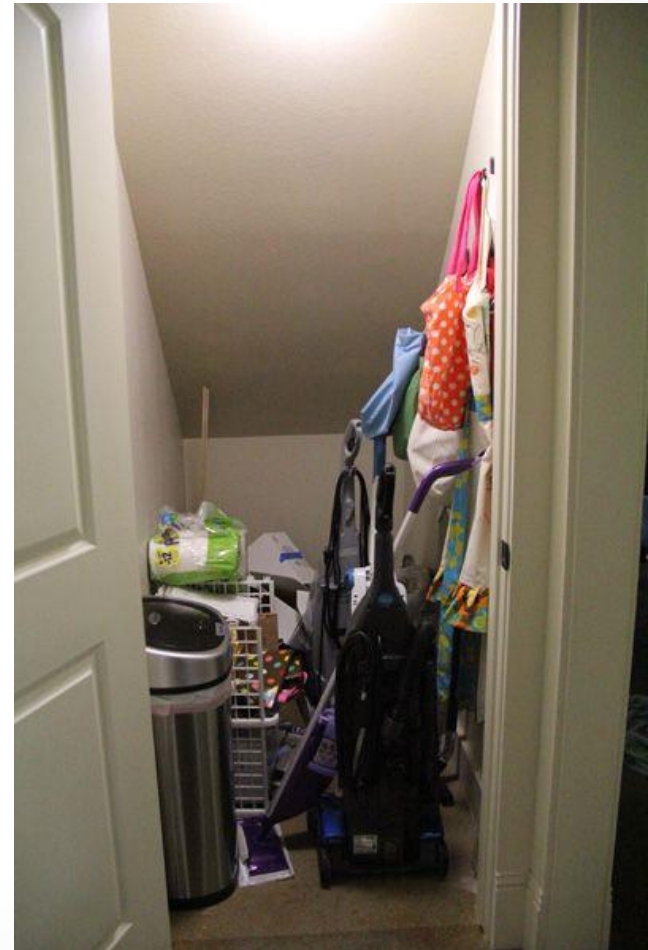


Fire Protection

Construction/Sprinkler/Alarm

8) Storage under stair not rated per IBC

- Rating includes walls, doors & bottom of stair Assembly. See IBC 1009.6.3



Fire Protection

Construction/Sprinkler/Alarm

9) Rated cap not provided for rated stair enclosures.

(from both sides not just a finish rating)



Basic Principles Fire Containment 4

Fire Rating of Construction Systems³

Ceiling Systems

1 Hour	2 Hour	3 Hour
<p>12mm gypsum wallboard applied to drywall resilient furring channels 600mm O.C. and nailed to wood joists 400mm O.C. Wood joists supporting 25mm T&G finish floor.</p>	<p>12mm gypsum wallboard applied to drywall furring channels. Furring channels 600mm O.C., attached with 18 gauge wire ties open web steel joists 600mm O.C. supporting rib metal lath on 28 gauge corrugated steel and 62mm concrete slab.</p>	<p>Labels: STEEL RUNNERS, 3-16mm FIRE RATED PANELS, 25mm, 12mm, WIRE MESH, CORNER REINFORCEMENT, 35mm x 22mm ANGLE RUNNER</p>

Fire Protection

Construction/Sprinkler/Alarm

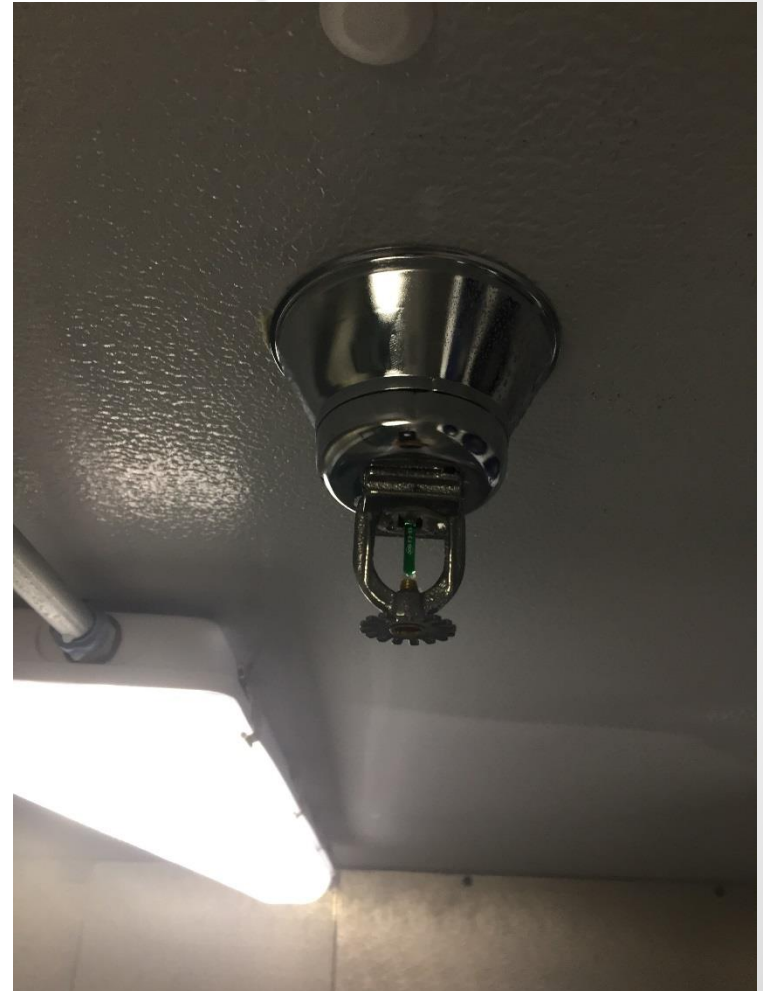
10) Duct smoke detection not tied into alarm system.

- Manually test system to verify proper operation



Fire Protection Construction/Sprinkler/Alarm

**11) Heads in freezers
and coolers not having the
correct rating.**

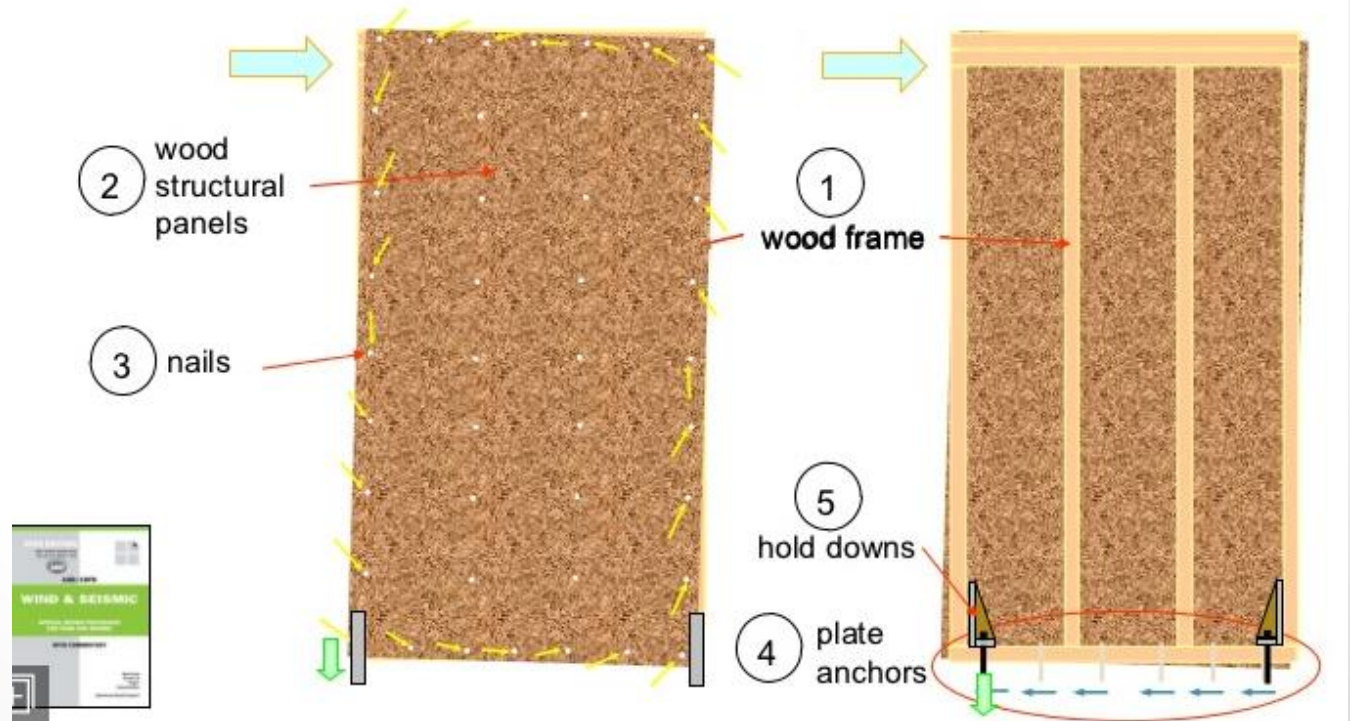


Structural

Structural

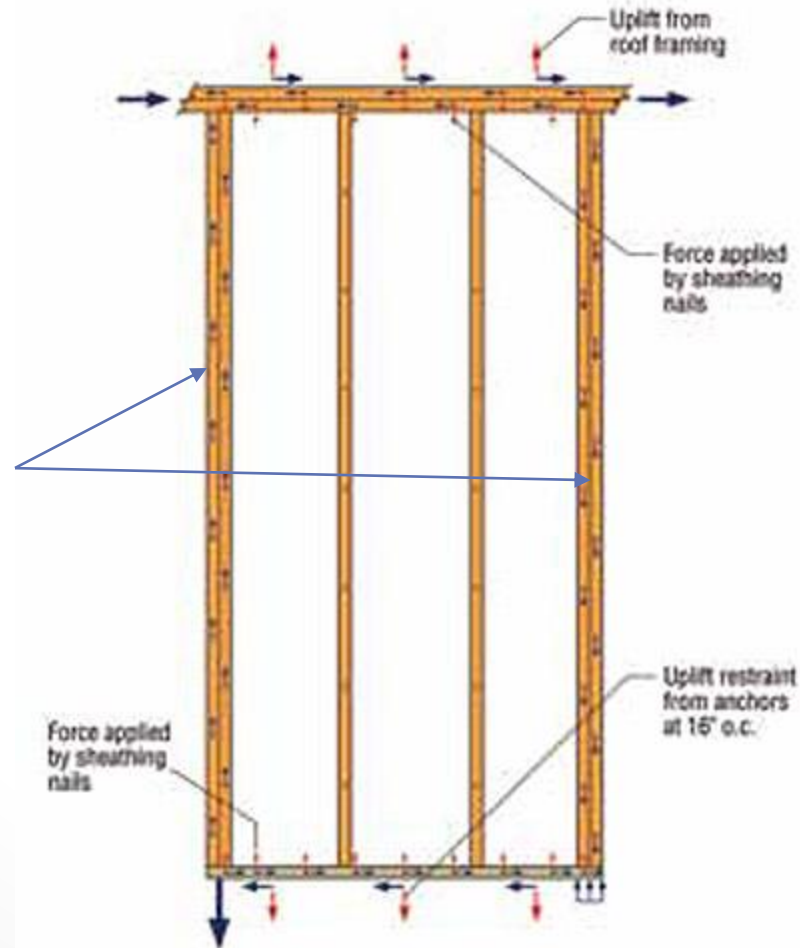
1) Fastening requirements for shear walls not followed – missing blocking / fasteners at panel edges. Fastener spacing not followed especially with gypsum shear walls.

- Five parts of a shear wall



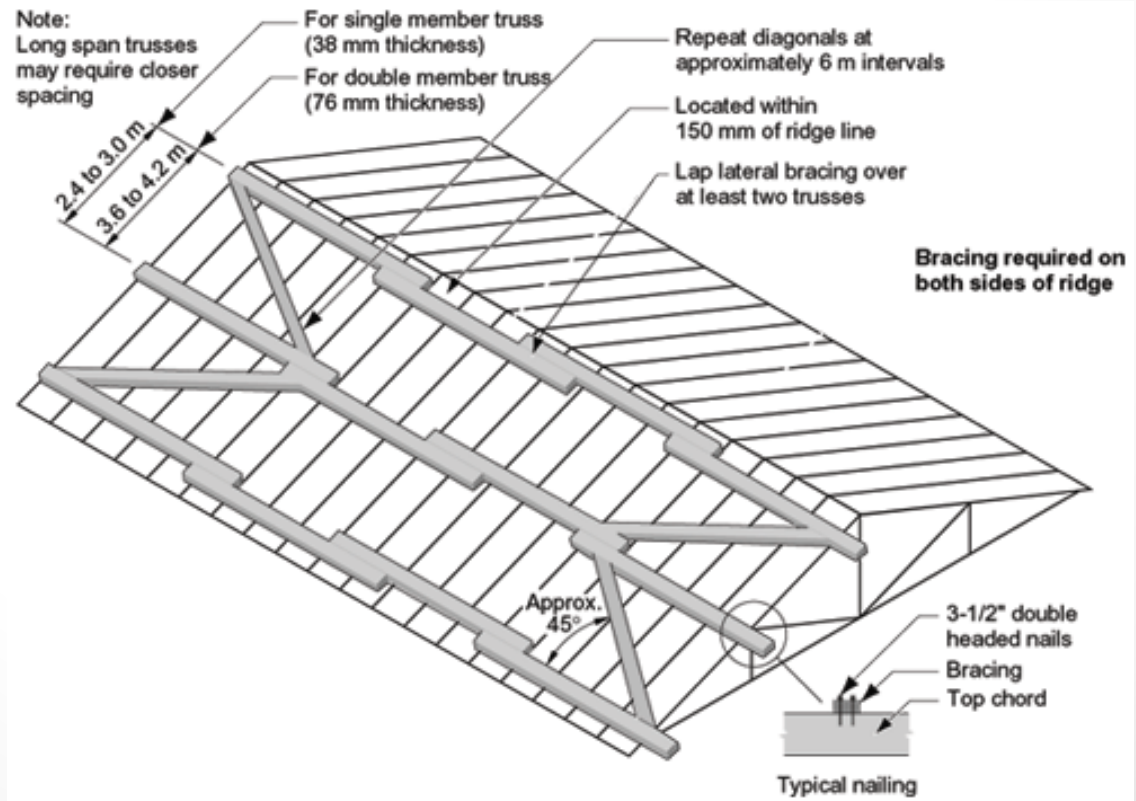
Structural

Double stud required at end of shear walls.



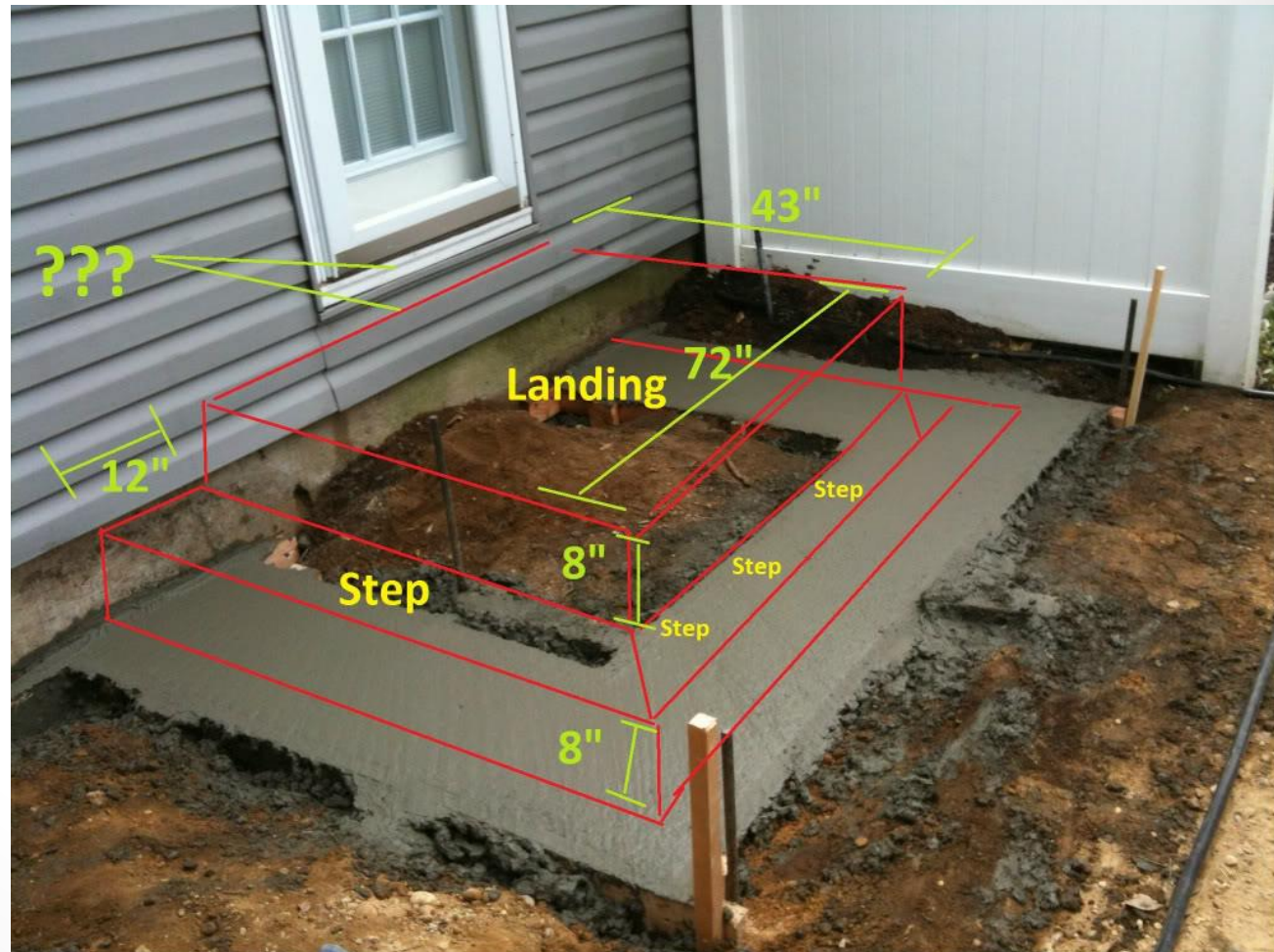
Structural

2) Truss bracing not installed.



Structural

3) Lack of frost footings for exterior door landings or stoops.



Structural

4) Improper fasteners used in joist saddles.



HVAC & Energy

HVAC & Energy

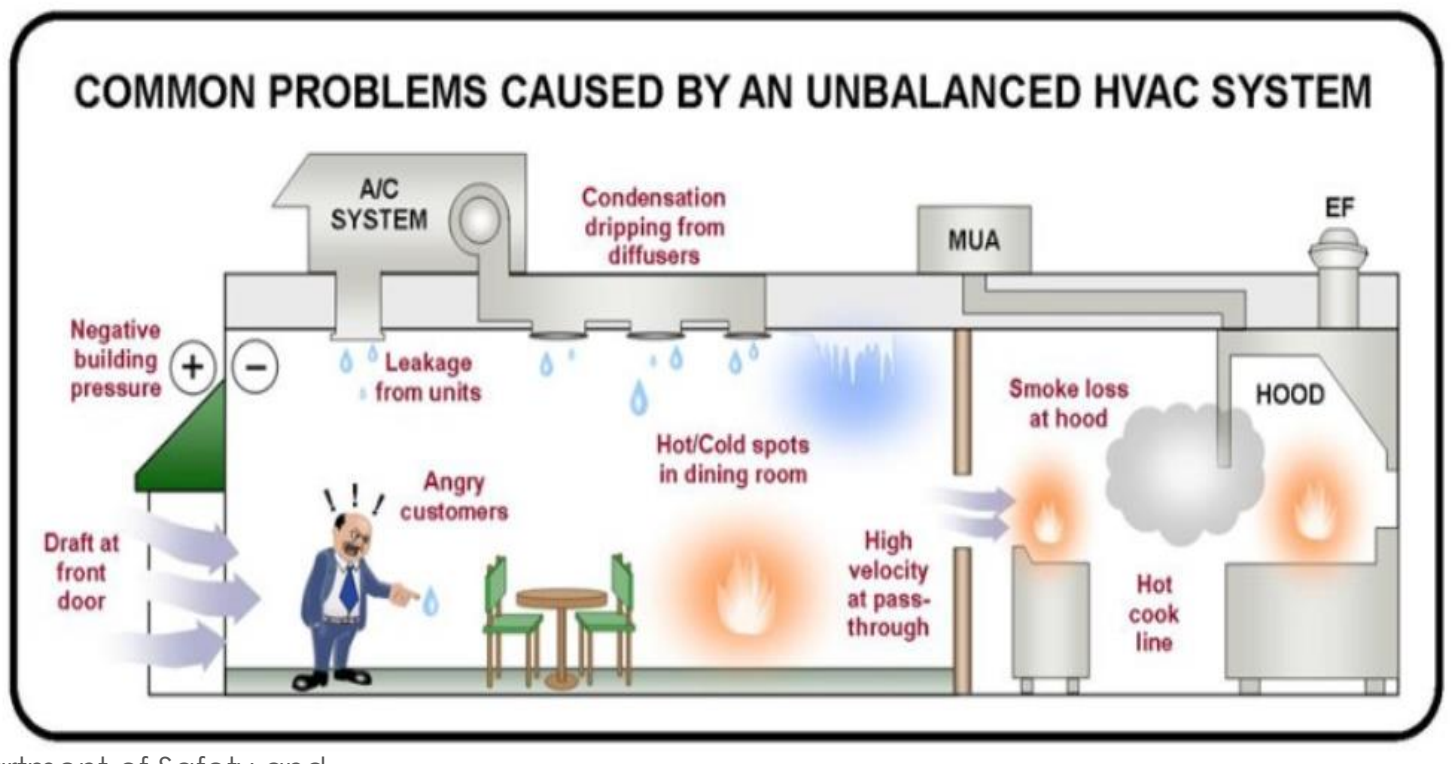
1) Ventilation not running continuously in service/repair garage as designed.

- Intermittent exhaust systems are not allowed for service/repair garages. They are ONLY allowed for enclosed parking areas.



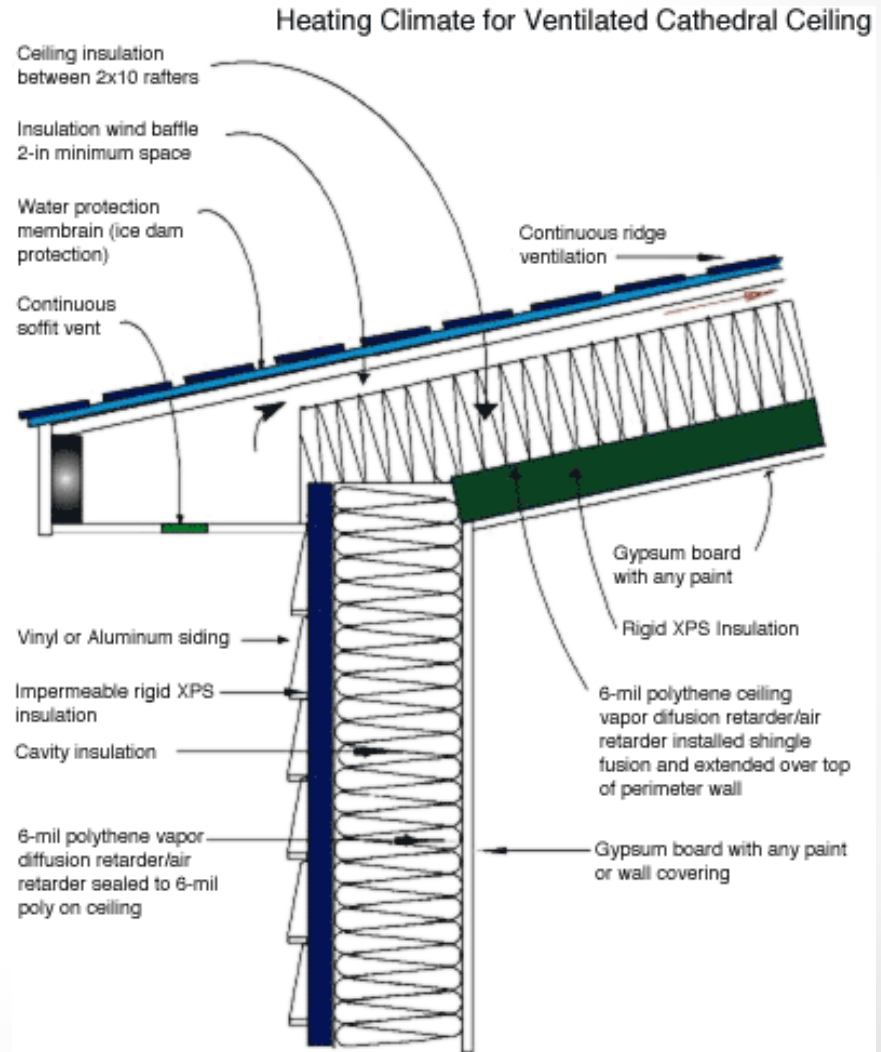
HVAC & Energy

2) Balancing reports not prepared or submitted.



HVAC & Energy

3) Thermal barrier is not installed.



HVAC & Energy

4) Missing return air transfer grills.

- **Air may not be transferred from room to corridor per IBC 1018. Each room is required to have a return air duct.**

HVAC & Energy

5) Exhaust discharge not meeting clearance to air intake or property lines.

HVAC & Energy

6) Grease hood exhaust discharge not high enough above roof, too close to parapet or walls.



HVAC & Energy

7) Type 1 hood requirements.

IMC 507.2.1 states that if there are appliances that product grease or smoke, a type I hood shall be installed.

- **Dept. FAQ provides flexibility and in summary, states that the following can be used to come to a conclusion as to the need for installation:**
 - **Frequency of use (how many times a week/month)**
 - **Duration (how many hours)**
 - **Use (what are you cooking)**
 - **Building layout (Is there a kitchen table or a fellowship hall adjacent to the kitchen)?**
 - **What does the appliance installation instructions require?**



HVAC & Energy

8) Bird or insect screens installed on dryer vent caps.

- **These should not exist since they collect lint & interfere with the movement of exhaust air**
- **The exhaust outlet shall be addressed with a damper**



HVAC & Energy

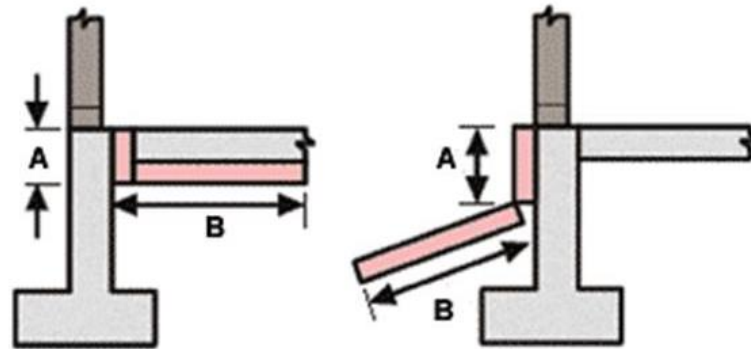
9) Exhaust not provided in janitors closet with mop sink as required SPS 364.0403

- Note that a janitors closet is not required, but if a mop sink, janitors sink, service sink, etc is enclosed in a unoccupied space, THEN exhausts shall be provided. Check for an undercut via the door for make-up air so exhaust fan does not “burn out”.

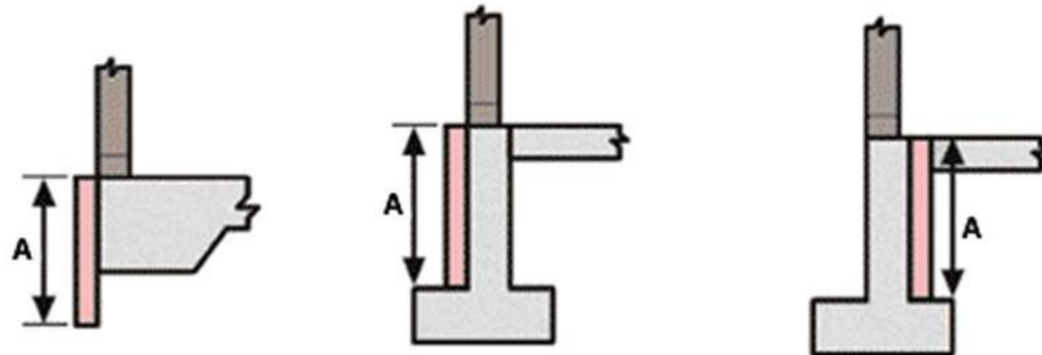


HVAC & Energy

10) Insulating foundations done correctly

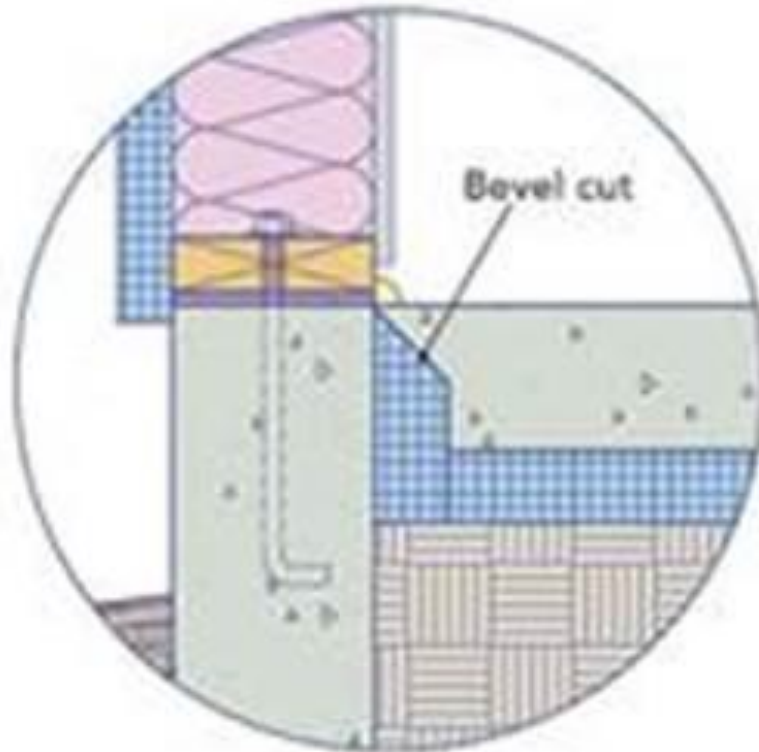


Horizontal With Vertical Slab Insulation
($A + B = \text{Insulation Depth}$;
if $A > B$, Enter As Vertical Insulation)



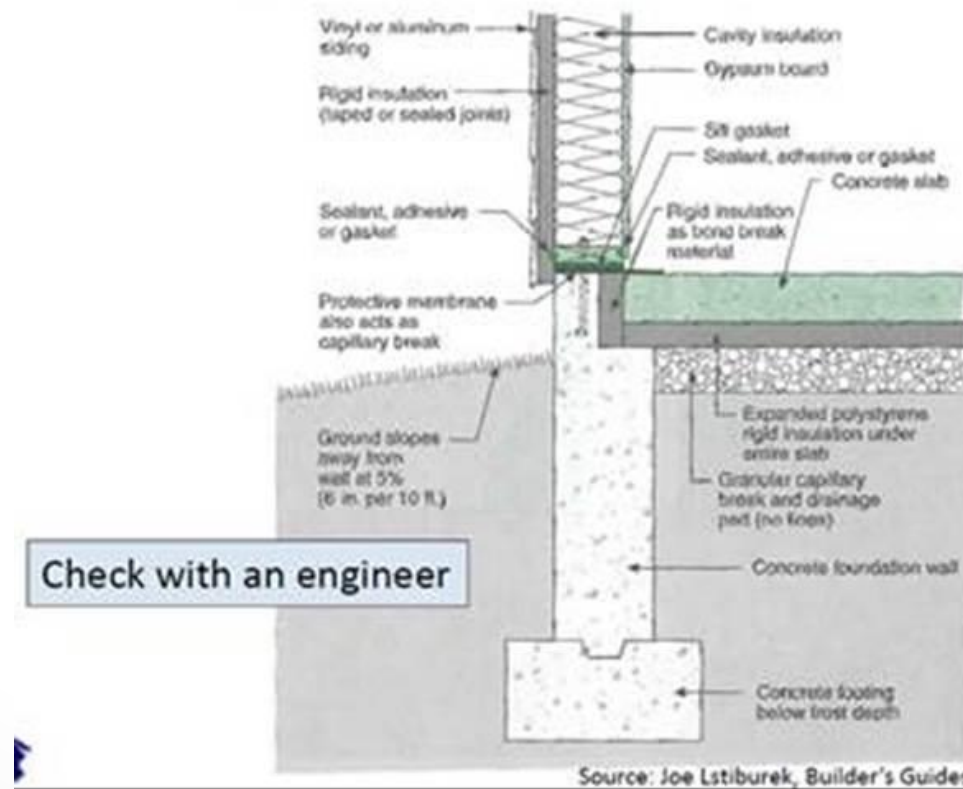
Vertical Insulation ($A = \text{Insulation Depth}$)

- Insulation can be cut at a 45° degree angle at the top. In this way, the concrete will “cover” the foam plastic insulation, thus an additional thermal barrier would not be required.



- One must be aware of the need to create a thermal barrier per IBC 2603.4 between the foam plastic and the occupied space. Another way to address is to “hide” the exposed foam plastic as shown below:

Cantilevered sill plate



Wrap Up

Thank you!

Any Questions?